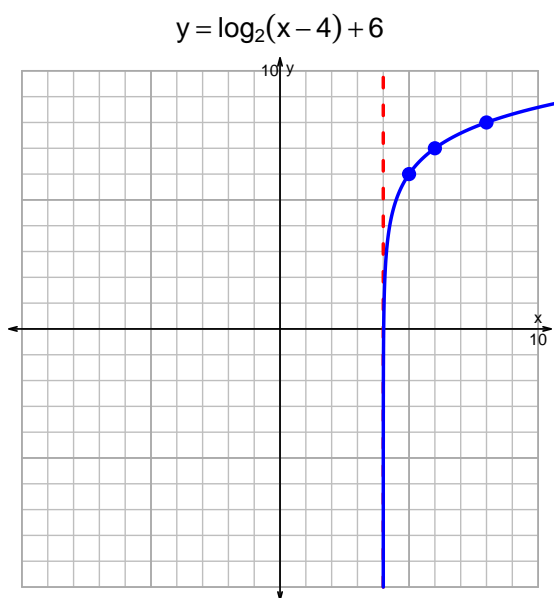
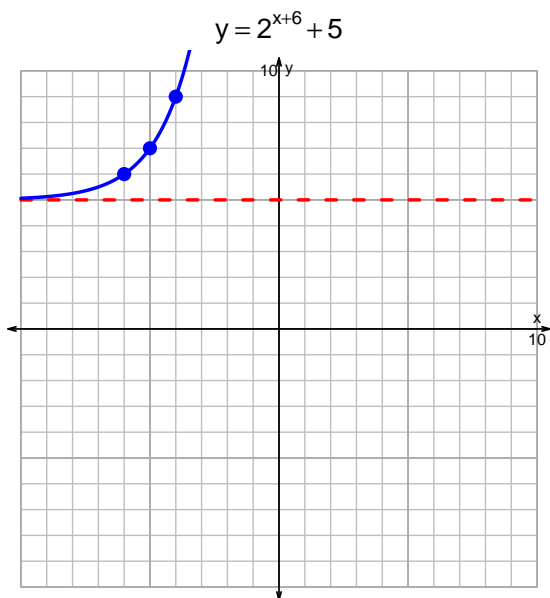


Name: \_\_\_\_\_

Date: \_\_\_\_\_

# s18QUIZ: EXP LOG (SLTN v267)

- Graph  $y = 2^{x+6} + 5$  and  $y = \log_2(x - 4) + 6$  on the grids below. Also, draw any asymptotes with dotted lines.



- Write (but do not evaluate) the solution to the equation below by writing a logarithmic expression.

$$19 = \left(\frac{3}{4}\right) \cdot 10^{5t/7}$$

Divide both sides by  $\frac{3}{4}$ .

$$\frac{19 \cdot 4}{3} = 10^{5t/7}$$

Take log, base 10, of both sides.

$$\log_{10} \left( \frac{19 \cdot 4}{3} \right) = \frac{5t}{7}$$

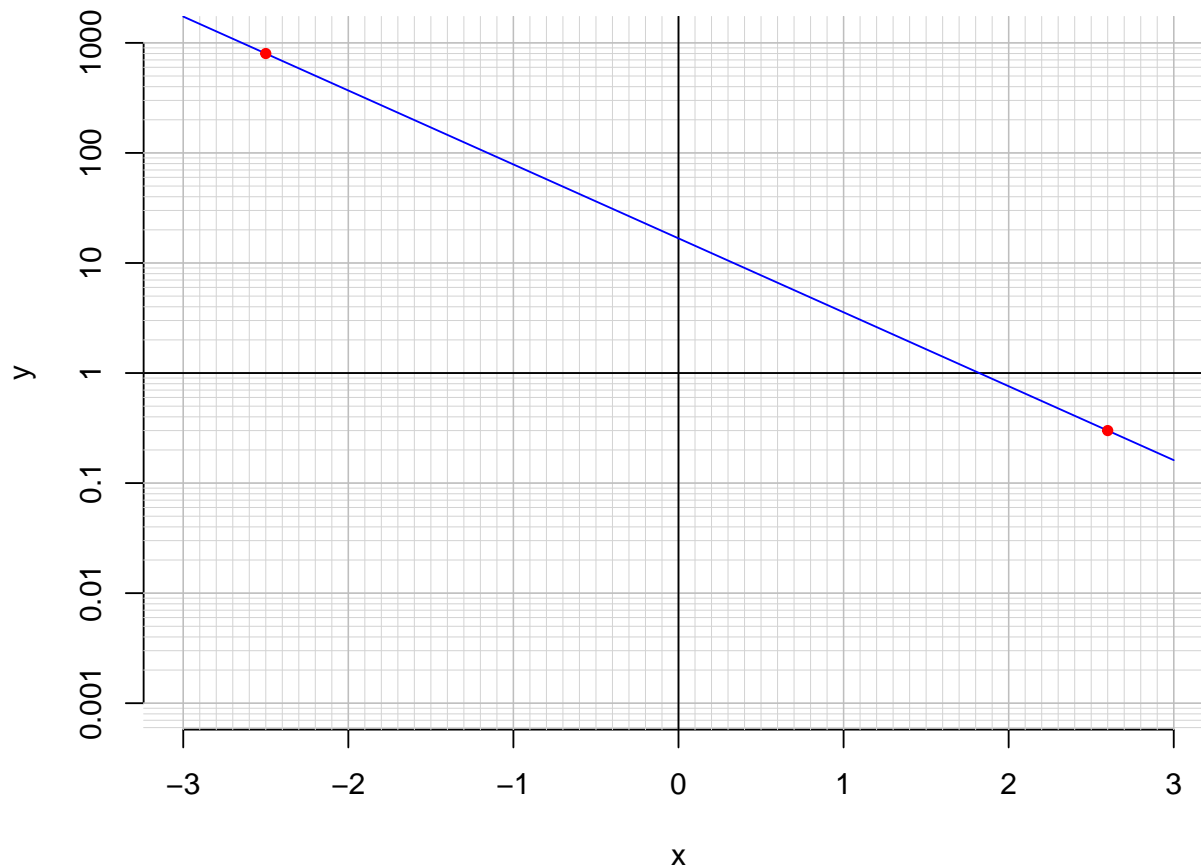
Divide both sides by  $\frac{5}{7}$ .

$$\frac{7}{5} \cdot \log_{10} \left( \frac{19 \cdot 4}{3} \right) = t$$

Switch sides.

$$t = \frac{7}{5} \cdot \log_{10} \left( \frac{19 \cdot 4}{3} \right)$$

3. An exponential function  $f(x) = 16.7 \cdot e^{-1.55x}$  is graphed below on a semi-log plot.



- a. Using the plot above, evaluate  $f(2.6)$ .

$$f(2.6) = 0.3$$

- b. Express  $f^{-1}(x)$ , the inverse of  $f$ .

$$f^{-1}(x) = \frac{-1}{1.55} \cdot \ln\left(\frac{x}{16.7}\right)$$

- c. Using the plot above, evaluate  $f^{-1}(800)$ .

$$f^{-1}(800) = -2.5$$